GARDEN AND FOREST.

PUBLISHED WEEKLY BY

THE GARDEN AND FOREST PUBLISHING CO.

OFFICE: TRIBUNE BUILDING, NEW YORK.

Conducted by . . . . . Professor C. S. SARGENT.

ENTERED AS SECOND-CLASS MATTER AT THE POST-OFFICE AT NEW YORK, N. Y.

NEW YORK, WEDNESDAY, MARCH 11, 1896.

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The Plunder of the Adirondack Reservation.

UNDER a resolution of the Assembly of this state, passed on the 3d of May, 1895, a committee of five was appointed to investigate certain alleged depredations on the Adirondack state timber lands. The committee, of which Mr. Howard Payson Wilds was Chairman, and Thomas H. Wagstaff, Secretary, have just made a unanimous report, based on some fifteen hundred type-written pages of testimony, from which it appears that a great portion of the timber owned by the state has been practically without any protection during five years past, and that any one who chose to do so could cut and sell it without molestation. The sixty-five witnesses examined at different points were lumbermen, contractors, jobbers, sawmill-owners, foresters, farmers and residents of the neighborhood of the state lands, and nearly all of them testified with reluctance. The facts obtained from them, after rigid examination, relate to 125 different lots owned by the state, and embracing altogether more than 35,000 acres of land. How much timber has been cut and sold from these lands can only be estimated roughly by the summary of the testimony given in this report, but a glance at the record showing that this lot "was nearly stripped of marketable timber"; that the next one was "well lumbered over"; that "500 acres were cleaned of everything marketable," and so on, suggests a very large sum total. The reason why it is difficult to obtain testimony was stated by one of the foresters: "They are all neighbors, and they all want to trespass some if they get a chance, and, as a rule, they won't squeal on each other. If a man does, and it is known, they turn him down pretty quick." The loss, then, of an enormous amount of timber, a local public opinion which justifies the pillage of the state lands, and the inadequacy of the machinery provided by the state for protecting its forests are the three facts which stand out prominently in this report.

It is difficult to say who is the leading criminal in the chain of agents, which extends from the chopper up to the mill-owner. The owners of sawmills and pulp-mills find in the Adirondacks a source of cheap lumber, and so long as they want wood somebody will be ready to furnish the logs either from his own private lands or from the public lands adjoining them. The mill-owners buy the logs, after they are cut, of agents who sublet contracts to jobbers, and these to gangs of choppers, so that the contract passes through many hands before it comes to the man who actually does the work. In every case where timber was cut beyond the boundary of private property, and upon the state lands, each witness would transfer the responsibility to the next man in the line, and the final trespasser almost invariably declared that if the boundaries of the state land had been better defined he would never have crossed them. As a matter of fact, in most cases no monuments mark the boundary except an occasional tree blazed many years ago. On most of the land the blazed trees are down or destroyed along most of the lines. Many of the lumbered lots have been burned over and the old marks are all obliterated. The only accessible descriptive data as to the boundaries of the state lands are those which have been furnished in the lists published by the State Forest Commission, in the local assessment rolls and in the forest map published in 1893. It may be true, therefore, that there have been cases where trespass has been committed from inability to find the state line, but one searches the testimony in vain to find that any precautions to prevent the state lands from being cut over were taken by those who let the job. No surveys are made, no boundaries are pointed out, the men are left to cut where they will, and in case of trespass the responsibility is thrown upon the jobbers, who are men of little property and willing to take chances. These depredations of timber, then, may occasionally be committed by jobbers through ignorance, and more frequently through recklessness; but they are often committed intentionally and defiantly.

Now, it is not to be believed that the lumber contractors do not know or understand the general location of the state lands, for whenever they assert some pretended right or color of title to the timber on some of these lands they can find the lines readily enough, and they at once assume the ownership of it and cut and haul it away. As a rule, this cutting and hauling has been a matter of general knowledge, and yet no one has molested contractor or jobber, and having ventured once to cut timber without trouble or expense they do so again, knowing that the settlement will be easy even if they are detected in the trespass. In general the jobbers cut where the contractors and lumbermen employ them, and they cut without investigation or concern as to whether the land belongs to the state or not. The common workmen are still more indifferent as to the ownership of the land so long as they make a living from their work. All this is done so openly that concealment is impossible—indeed, it is never attempted—and yet it is a fact that seldom, if ever, have trespassers been caught in the act of cutting or hauling timber on state lands by the forester in the discharge of his duties. This officer rarely visits the state lands during the lumbering season, and he waits till the following spring to prosecute his investigations, such as they are. Rarely, indeed, has any careful search been made by a state official to ascertain the extent of trespass, or to identify the trespasser, or to trace the disposition of the timber. The most that has been done is to report the matter to the State Forest Commission with a recommendation as to what sum should be charged for the logs in case of settlement. No prosecution has been carried on in any case for trespass, the depredators being always dealt with as innocent trespassers. At least, it does not appear that a single prosecution for the statutory penalty has ever been made in any of the frequent cases of trespass shown in this investigation, although thousands of trees have been cut for which the penalty should have been enforced. Logs have sometimes been seized and sold for what was offered, or they have been left to lie where they were found, because no one in the neighborhood of the land or of the lumberman was willing to bid against the trespasser.

Occasionally the logs are traced, but the settlement for them is made in accordance with the recommendation of the forester on the stumpage value and for a quantity agreed upon, often without regard to the facts in the case, and seldom, if in any single instance, has the adjustment for timber cut on state lands been based on a value above the market rate for like timber standing. The trespasser, then, has one chance of profit by cutting his timber without any cost. If his trespass is reported he has another chance of profit from an understatement of the quantity of timber charged as taken, and he has still another chance by settling with the state at market rate, or lower still for stumpage.

It is very plain that unless some radical change is made in the law and in public sentiment or in both there will soon be no timber left on the state lands, at least on the small and isolated parcels of such lands. It is even contended by some that the forests are so vast, the number of persons united by an interest in the cutting of timber so great, and the state police force so small that it is impossible to prevent timber thieving. It is doubtless true, as is claimed by the Forest Commission, that the state lands in the main forest, scattered like the black squares over a checkerboard, and interspersed with private holdings, are hard to patrol with the small number of foresters at command, and it would be of great advantage to the state to buy up these scattered parcels within the reservation, to provide more protectors and place them where there is the greatest liability to depredation. Again, as this report insists, these foresters should be residents of the special locality assigned to their care, and they should devote their entire time to duties as forest guardians and travel over their district at least once a month. It should be their duty to follow up every clue and prosecute for recovery and punishment to the full penalty of the law, and they should be charged with the duty of enforcing all laws relating to the forest preserve. No one can doubt that these trespasses on state lands could then be materially lessened, if not altogether stopped. Property-owners and contractors would soon learn to know where their own boundaries were if they were sure of punishment when they transgressed them. That it is possible to protect the timber on state lands is evident from the fact that private owners are rarely troubled by timber thieves, because it is known that the full penalty of the law and the full value of the timber cut or taken will be exacted. A like enforcement of the rights of the state and of the penalty for every violation would operate in the same way to stop trespassers on state lands. There is a fine of $25.00 for every tree unlawfully cut, but this extreme amount is never exacted, and this report rightly insists that, in addition to a money penalty, every one who cuts or aids in cutting or transporting state timber should be held guilty of a misdemeanor. The penal code provides for malicious injury and destruction of timber on state lands, and a person who willfully cuts down, destroys or injures any timber standing or lying on lands of the people of the state is punishable by imprisonment and fine, or both. But this does not reach depredations on timber within the forest reserve, nor does it prevent the violation of the constitutional prohibition for the sale and removal of timber on the reserve. It is, therefore, recommended that depredations on the forest reserve—that is, the felling and removal, or the causing to be felled or removed, of any timber on the state lands, or of receiving with knowledge timber taken from the state land without the authority of law—be made a misdemeanor in addition to the fine.

Beyond question, it should be made a criminal offense to steal timber from the state, but without a compelling public opinion behind it such an act would never be enforced. What is needed more than law is an aroused public conscience. A man is treated like a thief by his neighbors if he steals their timber, but so long as they consider him an innocent trespasser at the worst if he chances to be detected in appropriating the timber of the state, the public forests will be a public prey.

Notes of Mexican Travel.—XI.

CUERNAVACA.

MY eleventh Mexican journey was limited to the last three months of 1895. I found the rainy season drawing to a close when I reached my field at the end of September. Everywhere over south Mexico evidence of abundant rains was given by a better-developed vegetation than I had ever before seen. Not a few scarce plants which had hitherto eluded my endeavor to secure specimens in sufficient number for my large distribution, now easily yielded me ample material. In quest of these I tramped once more several familiar fields. I saw the delightful Jalisco region smiling with plenty, as always; its people happy and enterprising. Greatly increased traffic over the railroad attested their awakening activity—their really getting into line with the world's progress. A better illustration could scarcely be found of the civilizing and developing power of the railroad, and the Mexican Central, encouraged by such results, is advancing its line farther into this fertile state.

Again I visited for a few weeks the remote state of Oaxaca, traveling the dry and heated cañons of the lowland district of Cuicatlan as well as the elevated and heavily forested mountains to the north of its capital. My delightful occupation during the sunny days of the tropic autumn was the gathering of new or rare species located the previous year, as well as those which now surprised me by a seeming first appearance. Of nearly everything there was in this season a profusion. A chief object in climbing again the Sierra de San Felipe above the city of Oaxaca was to secure a full complement of specimens of Pinus Teocote, found there by Liebmann fifty years ago. The species occupies, almost to the exclusion of other trees, certain ridges on the flanks of the mountain at an elevation of about 9,000 feet over sea-level, the soil of which is a reddish clay—dry, hard and poor. In such conditions it is a slender tree of inferior, or, at best, but medium size, with hard and resinous wood of reddish color. P. Montezumæ, at the same elevation and below, mingles with the Oaks in more fertile and moister soil, while above, and especially on the summit ridges, it sometimes forms solid forests, the best-developed individuals of which (those standing in summit valleys) are three to four feet in diameter.

Several weeks of my brief season, while the course of vegetation was at its best, but swiftly passing, were devoted to work in a charming field which was to me a fresh one. Such was the country surrounding the city of Cuernavaca, which lies beyond the mountain-wall that forms the southern rim of the Valley of Mexico. Colonel Hanyssón, who, with irresistible energy, is opening waterways and steelways over the Mexican Republic, had carried his Mexico, Cuernavaca & Pacific Railroad almost to Cuernavaca, some forty miles south from the metropolis, making the dreaded diligence ride over frightful lava-beds and over mountain heights a thing of the past. Finding now so easy of access a region whose praises had long been sung to me, the temptation to reconnoitre its vegetation, before traveling far away, was not to be resisted. The ride by train revealed magnificent scenery—the grandest seen in Mexico; and from my three days' trip I returned with so large a load of plants that I moved over to Cuernavaca and settled down to work there. Other regions might wait.

The Cuernavaca train, issuing northward from the Buena Vista Station, in Mexico City, first swings around to the west over salt meadows, then turns southward just back of the heights of Chapultepec, crowned with national buildings, to pass over Scott's battle-field of Molino del Rey, through Tacubaya and other suburban towns, most interesting with their magnificent villas, surrounded by parks and gardens, and over dry glades bristling with plantations of Maguey. About ten miles out the foot of the Sierra de Ajusco is reached. Here, after passing through a scattered forest of Pinus leiophylla, a symmetrical tree of medium size, with the slenderest leaves and densest among

Pines, we are confronted by lava-beds covering the mountain-side and spreading for miles over the valley at its foot, a wild waste, almost impassable even on foot, black, brown or red rock, but half-concealed by vegetation. Down the slope innumerable streams of molten lava once poured, crowding upon and overrunning each other, heaping up ridges and hillocks or plowing out channels, seething and swirling, and, as they cooled, cracking into chasms, or, by upheavals of crust, forming frequent little grottoes. Right over this pedrigal, through devious loops and up toilsome grades, our train mounts to the summit of the Sierra. To scan the scenes through which we pass yields intense interest. This pedrigal is seen to be a preserve of plants from far and near. For beauty, it is like a flower garden. From nooks and crannies of the rough rocks, or from open patches amid masses of lava, spring Dahlias and Begonias, Senecios and Stevias, Pentstemons and Salvias, flowering shrubs and flowering trees—blooms in every color to make the scene bright and pleasing. On driest crags stand great Cotyledons and Sedums, and in the partial shade of little grots rugged walls are softened by delicate Ferns. Thus, on a gigantic scale, nature has here wrought at wild gardening with surpassing results. One catches glimpses of a thousand pieces of rock work which the gardener would covet and long to transport to his city parks. Higher up the scene changes for a brief space to one of extreme desolation, where fragments of lichened rock strew the slope. Then, as we near the summit over such open slopes, our eyes turn to survey the Valley of Mexico, that wonderful valley, in the praise of whose beauty and grandeur the Spaniard exhausted the riches of his language. No better point of observation could be chosen. We are some 2,000 feet higher than the level of the valley, and are here sitting at our ease in a railway train. Nothing obstructs our view of the entire valley some fifty miles in breadth. We look down upon the great city in its midst, with its two hundred towers and domes; see the causeways, marked by bordering lines of Willows and Australian Gum-trees, which radiate from it across green meadows; count scores of villages nestling amid greenery and shade, and trace the shining lakes, white-rimmed by bare alkaline flats. We follow the complete circle of mountains which embrace this valley. Over against us in the south-east, and seemingly face to face with us at this height, dominating all the circle, stand the two great snowy mountains which are the crown of all the scene.

Crashing through rock-cuts on the verge of the summit we are swiftly borne into a thin forest of Pinus Montezumæ, with scattered lines of Cupressus Benthami along watercourses, then out over open grass lands, broken by fields of Wheat, Barley and Potatoes, and on among abrupt knobs of volcanic rock, with Juniperus tetragona finding congenial conditions in their scanty soil. A mile or two away on our right the bare peak of Ajusco rises some 3,000 feet above us; and nearer on our left are several prominent summits of rounded outline. Below us and near we mark a minor crater like those strewn eastward over the valley, a depressed cone of regular form and showing a sunken top. After a dozen miles of this mountain plateau, called the Serrano de Ajusco, we enter near its southern border a heavier forest of Pinus Montezumæ. This forest extends far down the southern slope of the mountain, but other species of trees gradually take the place of the Pine.

Cuernavaca is situated at the foot of the southern slope of Ajusco, where the cold storms which sweep the Gulf coast in winter can hardly gain access; hence it enjoys the perfection of a winter climate. Fields of tender vegetables, like tomatoes and squashes, planted in November for fruiting in winter, attest the absence of frost. Its summer climate is also agreeable, for its elevation of 5,000 feet above sea-level precludes oppressive heat. Moreover, the rain is said to fall here mostly by night. From this point one has a nearer view than from the City of Mexico of the great snowy summits rising above forested slopes; and here the interest of the view is greatly enhanced by the striking contrast afforded by an intermediate range of bare red rock, disordered masses, serrated, castellated and pinnacled beyond description. Above and about the town the mountain side is furrowed by many ravines so deep as to receive the name of barrancas. Below the town these open out into a wide valley which is green throughout the year with plantations of cane. Streams of pure water course down through every street, and fountains are frequent. To this charming spot Cortez came to build his palace and enjoy the fruits of his conquest; to this quaint and quiet town, verdant and shady under bright, warm skies, was attracted the ill-fated Maximilian to make himself a secluded home, and hither he was wont to ride by night to hide from assassins in the thick wood of his high-walled garden.

The several barrancas of this neighborhood, with their brooks and waterfalls, their thickets of shrubs, their cliffs and bluffs, shaded or exposed, dry or wet, and the swampy meadows at their bottom offered me a field for botanizing which I have not seen excelled. The mountain woods more distant were hardly less inviting. The character of its plants indicates that this region belongs to the same floral zone as Oaxaca and Guadalajara, and I detected here twenty-five or more species which have been late discoveries in those fields. This fact may indicate that the botanists, Bourgeau and Bilimek, who followed Maximilian here, shared their master's fear, for these plants were growing within easy distance from the city; but, better than that, this district was still treasuring its own quota of undescribed plants to reward my eager search. The most conspicuous among the new plants found about Cuernavaca is Lippia iodantha, Rob. and Greenm. (see fig. on page 105), a shrub five to ten feet in height. Its small, yellow flowers are borne in purple bracted heads nearly an inch in diameter, and these profusely cover the branches of the plant, making it a lovely object through many weeks of the autumn.

Charlotte, Vt. *C. G. Pringle.*

Notes on the Names of Yuccas.

FOR many years after their discovery by the botanists of the commission which established the boundary between the United States and Mexico, at the close of the Mexican war, misapprehension as to the specific rank and distribution of the baccate-fruited Yuccas of our southern territory existed, all the early collections being extremely meagre and unsatisfactory.

The first species of this group which was described is Yucca baccata (Torrey, *Bot. Mex. Bound. Surv.* [1859]). It is a plant with a short subterranean stem, or with a stem lying prostrate on the surface of the ground, glaucous concave leaves much roughened on the back, flowers often more than four inches in length—that is considerably longer than those of any other Yucca now known, and succulent black fruits furnished at the apex with short beaks. Yucca baccata inhabits arid plains and valleys in southern Colorado and Utah, and northern New Mexico and Arizona, and apparently never forms an upright stem or descends from the high Colorado plateau into the southern deserts. It was first collected by Dr. J. M. Bigelow in New Mexico, and the earliest mention of it is on page 147 of the fourth volume of the Pacific Railroad Reports. When Torrey described his Yucca baccata a few years later in the Mexican Boundary Report, he referred to it a Yucca which had been collected by Thurber, near Parras, in Cohahuila, and suggested the varietal name of Macrocarpa for a large arborescent Yucca which Dr. Bigelow had found on the plains of western Texas, alluding at the same time to a Yucca which Dr. Parry had gathered near Monterey, in California.

Dr. Engelmann, in his studies of Yucca, published in 1873 in the third volume of the *Transactions of the St. Louis Academy*, in which the characters of the genus and its natural sections are established, considered the Parras plant

of Thurber and the western Texas plant of Bigelow identical, and southern or arborescent forms of the stemless Yucca baccata (Yucca baccata, β australis) connected with that species by Parry's California plant.

In the spring of 1887 I was in Nuovo Leon and was able to establish the fact that the flower panicles of the large arborescent Yucca of that part of Mexico are pendulous (Garden and Forest, i., 78, fig. 13-14), a character peculiar, so far as is now known, to this tree; and that it had been described in 1873 from young plants in European gardens as Yucca filifera. It is this species, as shown by Thurber's specimen (No. 1857) in the herbarium of Columbia College, which appears in a picture on page 490 of the second volume of the Personal Narrative of the American Boundary Commission, where a wide-branched tree bears numerous erect panicles of flowers which display the zeal rather than the accuracy of the artist.

These erect panicles of the artist's imagination caused some confusion in Professor Trelease's paper on Yucca in the *Fourth Report of the Missouri Botanical Garden*, in which he recognizes the fact that the Yucca of the plains of western Texas is a distinct species for which he proposed the name of Yucca australis, joining with it, however, Thurber's Parras tree, which he recognized as distinct from Yucca filifera, the name proposed in an earlier paper for the Nuovo Leon, Parras and western Texas plants.

This arboresent Yucca of western Texas, which is the largest Yucca of the United States, is quite distinct from the stemless Yucca baccata, not only in habit and size, but in the color, shape and smoothness of the leaves and the character of their fibrous margins, the long pendulous branches of the panicles of flowers, which were well shown in the illustration in our last volume (p. 415); in the size and shape of the flowers and the size of the fruit. This plant having been first described as Yucca baccata, var. macrocarpa, should when raised to a species bear the name of Yucca macrocarpa, which I now propose for it.*

The confusion with the name Yucca macrocarpa is increased by the fact that in 1881 Engelmann gave it to an arborescent Yucca of the mountains of southern Arizona, which in 1873 he had described as Yucca Schottii, under the impression that the two plants were distinct, a view which the abundant material collected during the last few years shows to have been erroneous.

The synonymy of Yuccas has been further complicated by the use of the specific name, macrocarpa, for the Yucca found by Parry near Monterey, California, and always considered identical with Torrey's Yucca baccata until the naturalists of the United States Department of Agriculture connected with the Death Valley Expedition showed it to be distinct, and called it Yucca macrocarpa in the belief that it might be the same plant as Torrey's Yucca baccata, var. macrocarpa, of western Texas.

The habit of this southern California Yucca, the color, surface and margins of its leaves, and the size of its flowers abundantly distinguish it from the stemless Yucca baccata of Torrey and from Yucca macrocarpa of Texas. It is without a name, and I propose to call it Yucca Mohavensis,† as it is most abundant and grows to its largest size on the Mohave Desert, this, too, being the name which Dr. Coville, the botanist of the Death Valley Expedition, gave it in his manuscript notes of the expedition. *C. S. S.*

* The synonymy of this plant would be then:
Yucca macrocarpa.
Yucca baccata, var. macrocarpa, Torrey, *Bot. Mex. Bound. Surv.*, 222 (1858).
Yucca baccata, β australis, Engelmann, *Trans. St. Louis Acad.*, iii., 44 (in part) (1873).
Yucca baccata, Sargent, *Forest Trees North Am. 10th Census U. S.*, ix., 219 (in part) (1884).
Yucca filifera, Trelease, *Rep. Missouri Bot. Gard.*, iii., 162 (in part) (not Chabaud) (1892).
Yucca australis, Trelease, *l. c.*, iv., 190 (in part) (1893).

† Yucca Mohavensis.
Yucca filamentosa, ? Wood, *Proc. Phil. Acad.*, 1868, 167 (not Linnæus).
Yucca baccata, Engelmann, *l. c.* (in part) (not Torrey) (1873). Trelease, *Rep. Missouri Bot. Gard.*, iv., 185.
Yucca macrocapa, Merriam, *North American Fauna*, No. 7, 358, t. 14 (*Death Valley Exped.*, ii.) (not Yucca baccata, var. macrocarpa, Torrey, nor Yucca macrocarpa, Engelmann) (1893).

Foreign Correspondence.

London Letter.

Dendrobium sarmentosum.—This is a new species allied to Dendrobium barbatulum and lately named by Mr. Rolfe from specimens now flowering at Kew and which were received from Burma. It forms an erect cluster of crowded proliferous, slender pseudo-bulbs, eighteen inches high, with deciduous leaves and axillary flowers, usually in pairs and developed freely by the last matured growth. The flowers are only about an inch across, white, with a yellow stain on the front of the labellum, and a few thin lines of red on the side lobes. A well-flowered specimen is attractive as a flowering plant, but its chief charm is in its powerful violet-like odor. Messrs. Low & Co., of Clapton, also lately imported this species from Burma, and they exhibited it in flower last week under the name of D. fragrans. This, D. aureum, D. luteolum and D. Kingianum are worth a place in every collection of tropical Orchids on account of the sweet perfume of their flowers. They all flower in winter, examples of them being in flower now at Kew.

Dendrobium Curtisii, a hybrid between D. aureum and D. Cassiope, raised by Messrs. F. Sander & Co., resembles D. endocharis, but promises to be stronger and more floriferous. Its pseudo-bulbs are from six to twelve inches long and bear numerous flowers two inches in diameter, white, with a dull crimson blotch on the base of the lip.

Dendrobium pallens, a new hybrid between D. Findlayanum and D. Ainsworthii, raised in the garden of Sir Trevor Lawrence, is a beautiful addition to the numerous hybrid Dendrobes now in cultivation. Its flowers are large, white, faintly tinted with rose, the long cordate lip having a blotch of pale yellow in front. It is very free and appears to be a vigorous grower. A certificate was awarded to it.

Dendrobium Burfordiense, a hybrid between D. aureum and D. Linawianum, raised in 1892 by Sir Trevor Lawrence, was exhibited splendidly in flower by him last week. It has flowers as large as a good variety of D. nobile and colored pale rosy mauve tinged with yellow, the odor being equal to that of D. aureum. This is another hybrid that deserves to rank with the best of garden Orchids.

Odontoglossum retusum.—One of the most interesting of the many rare Orchids shown at the meeting of the Royal Horticultural Society held last week was a plant of this Odontoglossum from the collection of Mr. Woodall, Scarborough, who has had the plant many years and finds it is happiest when grown quite cool. Sir Trevor Lawrence possesses a plant of it, and these two are the only examples known. It has the pseudo-bulbs and habit of a Cochlioda, to which it is evidently closely allied, but it differs from the several garden representatives of that genus in the stoutness, length, branching and number of flowers upon its scape. This in Mr. Woodall's plant was twisted several times around stakes, and it bore at least one hundred flowers as large as those of Cochlioda Noëtzliana, their color being rich orange shaded with crimson. O. retusum was described by Lindley from a specimen collected by Hartweg on the mountains of Saraguro, Peru.

Houlletia tigrina.—A plant in flower of this rare species was shown last week by the Hon. Walter Rothschild. It was first described about forty years ago by Lindley from specimens imported and flowered by Monsieur Linden, whose collector, Schlim, found it in Ocana, Colombia, at an elevation of 4,800 feet. I have never seen it in flower before. The plant shown had broad, plaited, erect leaves nearly two feet long and bore two short erect scapes, one with two, the other with four flowers, each of which was four inches in diameter, the sepals ovate, concave, straw-colored, with dull rose spots and reticulations, the petals smaller, acute, with a lobe on each side and colored like the sepals, and the singularly formed, fleshy two-horned lip white, spotted with crimson. Although not so attractive as Houlletia Brocklehurstiana, it is as good a garden Orchid as the other half-dozen species of Houlletia known,

but like their allies, the Stanhopes, they do not find general favor, notwithstanding the large size, rich colors and aromatic odor of the flowers of most of them.

LÆLIA EYERMANIANA.—An importation of this beautiful Lælia was sold recently by auction under the name of L. Marriottiana. It was first flowered by Messrs. Sander & Co. in 1888, when Reichenbach gave it the former name and suggested that it was a natural hybrid between L. majalis and L. autumnalis. Two years ago a number of plants of it were sold by auction for L. majalis. Some of these were obtained for Kew, where they flowered freely, as many as eight flowers being borne by some of the scapes. They have flowered again this year. There is not much to distinguish this from L. furfuracea, except its free habit and many-flowered scape. Mr. Rolfe thinks it is a natural hybrid between L. majalis and L. albida. The flowers are as large as those of L. autumnalis and colored pale rose-purple, with tinges of a darker color on the segments, which are blunter than in typical L. furfuracea.

MASDEVALLIA SHUTTEYANA.—Sir Trevor Lawrence raised this hybrid in 1892 from Masdevallia Shuttleworthii and M. Hareyana. It has also been raised by Mr. Chamberlain, where it has lately flowered, and as the flowers of the latter plant are larger and of a brighter color the varietal name of Chamberlainiana was accepted for it by the Royal Horticultural Society. It is a remarkable hybrid, having short oblanceolate leaves, single-flowered scapes eight inches high and large flowers, somewhat like those of M. Shuttleworthii in shape, colored rich rosy mauve, tinged with red, the tails bright orange. Hybrids such as this are worthy additions to garden Orchids. The name is an attempt to hybridize the names of the parents.

MASDEVALLIA HENRIETTA, raised in the garden of Mr. F. L. Ames, Massachusetts, in 1893, from M. Shuttleworthii and

FIG. 11.—Lippia iodantha, n. sp. Rob. & Greenm. ined.—See page 102.

M. ignea, was exhibited in flower last week by Sir Trevor Lawrence, and was awarded a certificate. It bears some resemblance to the last-named hybrid, differing mainly in the color of the flowers, which are yellow, tinged with rose and red-brown.

Pleurothallis Roezlii.—This, which is one of the most remarkable of the three or four hundred species of Pleurothallis known, is represented in the collection of Sir Trevor Lawrence by a very large healthy specimen which was exhibited last week bearing six flower-scapes springing from a cluster of healthy green leaves, the blades measuring a foot in length and the petioles six inches. Each scape was a foot long, nodding, and bore about a dozen partially opened, inflated, crinkled flowers nearly two inches long and an inch across and colored deep claret-purple, the color of Veratrum nigrum. English cultivators were first made acquainted with this plant in 1885, when it was shown in flower in London by Monsieur Godefroy-Lebeuf, of Paris. There is a plant of it in the Kew collection which was raised from a leaf of Monsieur Godefroy-Lebeuf's plant, Pleurothallises being readily multiplied in this way. According to Veitch, P. Roezlii was first described in 1862 under the name of P. laurifolia, a name which is descriptive of the sturdy healthy green leaves of the plant. It is a native of Colombia.

Cypripedium nigritum.—Collectors of Cypripediums may like to know that Messrs. Low & Co. have plants of this practically unknown species. It was first described in 1882 by Reichenbach from specimens supplied by Messrs. Wallace, of Colchester, who had imported it from Borneo. It has the leaves and habit of C. virens and the flowers of C. barbatum, but smaller, darker, with narrower, paler petals and smaller, more numerous marginal warts. The dorsal sepal is only an inch long. Reichenbach said it was near C. barbatum, but quite distinct. Plants of it have recently flowered in the Clapton nursery, and have been determined by Mr. Rolfe.

Selenipedium Sargentianum has an exceptionally tall scape, a plant of it now in flower at Kew having a scape two and a half feet high. The flowers are developed singly on the upper portion, and they are about three inches across, yellowish green, with red margins to the segments. It is not likely to become a general favorite.

London. *W. Watson.*

Cultural Department.

The Essentials of a Good Lawn.

THIS is the season when we are often asked how to establish a good lawn and insure its permanence. Downing names three essential requisites: (1) Deep soil; (2) proper kinds of grass, and (3) frequent mowing. For this climate I would add a fourth—that is, plenty of water. The air of an average American summer is not so well adapted to the production of a fine lawn as is the humid atmosphere of Great Britain. There, not so much attention need be given to the richness of the soil, as the moisture takes its place in a measure. But in this country the soil should be deep and rich, with a subsoil capable of retaining moisture, but not in excess. If the subsoil is hard and tenacious it should be well underdrained and trenched, or subsoiled to a depth of sixteen or eighteen inches, so as to create a reservoir for holding moisture which may be drawn upon by the plants as needed during dry times. This matter of subsoiling does not receive the attention it deserves in our climate. Many persons seem to think that if the surface soil is in good condition nothing further is needed. Such persons should bear in mind that it is a deep soil only which will furnish moisture for grass roots through continued drought, so that the lawn will remain green during the entire summer and autumn.

Again, too much attention cannot be given to the preparation of the soil before the seed is sown. It should be plowed and replowed, cultivated, harrowed and rolled until the whole is thoroughly pulverized and mixed to a depth of ten inches. This work should be done in the fall, and then the plot should be left to settle all winter before the seed is sown. The foundation will then be firm. This not only makes a compact bed which the tender grass roots need, but it will insure the lawn against those little knolls and hollows which are so objectionable in appearance and do so much to obstruct the use of the mower.

Only two kinds of Grass are really worthy of consideration for this climate. These are Kentucky Blue Grass, Poa pratensis, and Red Top, Agrostis vulgaris. There are a few others, such as Rhode Island Bent Grass, a finer kind of Agrostis, which may be sown, but it is more expensive and little superior to a good strain of Red Top. A little Sweet Vernal Grass, or White Clover, may be added, but neither is essential. The coarser Grasses, such as Timothy, Orchard Grass or Meadow Fescul, should never be sown in a lawn. They are short-lived and too coarse and stiff to make a soft, velvety carpet. There are many lawn mixtures advertised and sold at high prices; some of them are good and will make excellent lawns; but, if analyzed, the best of them will be found to consist mainly of Blue Grass and Red Top, which may be bought in the market for from $1.50 to $2.50 a bushel.

To seed properly, from two to three bushels will be required to the acre, owing in some measure to the amount of chaff mixed with the seed. This should be sown as early in the spring as possible, so that the young plants may become well established before the hot dry weather of midsummer. The sowing of oats with the seed has been recommended as a protection to the young Grass-plants, but I have never yet found that a strong, gross-feeding plant like the Oat would furnish protection to a delicate, slow-growing one. On the contrary, the so-called protector will rob the weaker plant of its nourishment. Red Top germinates much more quickly than Blue Grass, and will furnish all the protection necessary, besides covering the surface with a green coat almost as quickly as Oats will. After the Blue Grass gets its roots well established in deep rich soil it will need no further protection, but will assume entire control in a very short time.

The third essential is early and frequent mowing. If the grass is allowed to get too large before being cut, the stubble will be too stiff, and we lose that soft velvety character which is only produced by frequent mowing. It is time to begin as soon as the grass is tall enough for the mower to catch it. A few annual weeds which may make their appearance during the summer will do no harm, as they will be kept down by the mower and not allowed to ripen their seeds; but such perennials as the Docks, Dandelion, Plantains and their kind should be dug up as soon as they can be seen, and water must be in constant supply to feed the grass, keep it green and growing. The deep-soil preparation will help to do this, but he is fortunate who can draw on some reservoir for occasional irrigation. Where water is always abundant less care need be given to fertilization, otherwise it will be well to top-dress the lawn early every spring with thirty or forty bushels of unleached ashes and three or four hundred pounds of bone-meal or superphosphate to the acre. This will keep the grass in thriving condition. Barn manure is too unsightly, and should not be used except in localities where snow covers the ground all winter, and then it should be raked off as early as possible in the spring. By following out the suggestions given here in providing the four essentials, we may have as fine lawns in this country as they do in England; lawns which will last a lifetime and be a continual source of pleasure to all who see them.

La Fayette, Ind. *J. Troop.*

Orchid Notes.

DENDROBIUM THYRSIFLORUM is usually an easy plant to manage, and yet we often hear of its failure to bloom. While it is growing it should be helped as much as possible to make a strong, unchecked growth until December, when it should begin to rest. In January and February the plants should be dried until the pseudo-bulbs show signs of shrinking, and then water should be given. If this is kept up the bulbs ought to be one or two inches long by the middle of February. If dried too completely the buds blast, if kept too moist new growths are encouraged at the expense of flowers. Dendrobium Hookerianum and D. Dalhousianum, in order to be flowered successfully, need more severe drying. If treated as evergreens they flower sparingly. Indeed, I have known specimens of D. Dalhousianum to be five feet high that have not bloomed for years. With a good root-system and large, healthy pseudo-bulbs a little shriveling does not hurt them in the least.

Vandas which have flowered well have a tendency to give a second crop and should have the stems nipped out. Second flowering will debilitate the plants, and the lower leaves will be lost and those which remain will turn pale. Vandas, Angræcums, Aërides and Phalænopses should not be dried as

severely as Dendrobiums, Lælias, Cattleyas and the like, which have a reserve in their pseudo-bulbs to prevent any sudden dangers from a longer drought than is necessary.

Potting should now be attended to, and Lælias, in particular, need working over wherever the peat is sour or sodden. If the plant has settled too low or has overgrown its receptacle it should be repotted. Some will only need a little new fibre tucked under them here and there. L. autumnalis and its varieties which have shown a good start in the roots need immediate attention. After covering the bottom of a basket with potsherds a thick layer of peat fibre should be added with the fibrous material loosely shaken out. After trimming old shoots close up to the stem and cutting out any diseased or bruised pseudo-bulbs, basket them with more peat. If proper-sized pieces of fibre are used and skillfully worked in, little or no wire will be needed. When finished the plants should be entirely inside the margin of the basket and raised above the edge. A little live sphagnum can be used on the top layer when basketed. By all means have the plant firm, the stems not buried, and in a position that allows the developing break to push on unobstructed. When finished, hang up and do not water for three or four days, to avoid any danger of starting decay at the roots. In a week or two baskets may be top-dressed with live sphagnum and watering can be increased. An intermediate house suits these plants and they need abundant light and air, although, of course, they never should be subjected to a draft. If Vanda Catharti has made a good growth and appears healthy, but refuses to flower, bend the stem to an oblique position, and this will sometimes have the desired effect. A light form of Cattleya Schrœderæ, with a beautifully marked and wide throat of orange, is now very handsome. The good forms of any recently imported plants can now be gone over and selected. Albinos usually have the outside of the base of the leaf of the same color as the remainder, while the usual forms are mottled with pink or red at the point of attachment. Albinos should be tried a second year before they can be considered lasting. They often assume a pinkish tinge after the first year.

Missouri Botanic Garden. *Emil Misch.*

Begonia Socotrana.

IT is difficult to understand the force of Mr. Miller's remark on page 97 that the effort to cross Begonia Socotrana directly with the fibrous-rooted section would be a waste of time. In B. Gloire de Sceaux (Socotrana × metallica) we have had for a decade a very beautiful hybrid which is valued wherever it is known. B. Bijou (Socotrana × insignis) is also a distinct and pleasing hybrid, perhaps not so well known. Monsieur Lemoine's hybrids Triomphe de Lemoine and Triomphe de Nancy, crosses between B. Socotrana and perhaps B. Roezlii, are interesting plants with succulent stems and rather stiff habit, having very numerous persistent flowers. These plants offer much encouragement to hybridizers, and it is singular that they have not been followed by crosses with other herbaceous kinds which would be more likely to prove valuable than crosses between tuberous kinds to ordinary cultivators. B. Socotrana was quickly taken in hand after its first flowering in 1881, and though a number of hybrids have been offered by Veitch and Lemoine they do not seem to have become at all common in cultivation. Veitch's productions—John Heal, Adonis and Winter Gem—are not rapidly propagated, and I found Adonis, the one tried here, an obstinate plant. The Lemoine hybrid, Gloire de Loraine (Socotrana × Dregii), has wonderful racemes of flowers which persist for many weeks, but the plant is of a rather stubborn character, and it can scarcely be classed among varieties likely to become popular. In fact, it is not clear that tuberous hybrids are desirable unless they prove to be readily reproduced from seed. Tuberous Begonias are short-lived, and, with the exception of B. Marliani, they require frequent propagation from seed or cuttings. In view of such crosses as have been made it would appear that the infusion of the blood of B. Socotrana militates against the latter mode of propagation.

Begonia Socotrana is very interesting botanically and horticulturally. It is distinct, but scarcely as beautiful as many of its interesting relatives, for, among the numerous species and hybrids of Begonias are a great many which, if well grown, are most charming plants both in foliage and flower. They are easily cared for, but, as a rule, the plants have one serious fault. If one may use the expression, their articulations are very unstable, and a sudden falling of temperature, a little gas or carelessness in watering will cause them to shed their leaves and flowers with great promptness. The small-flowered kinds are as handsome as those with large flowers, and we do not need any addition to the size, an illusion or delusion which too often misleads the hybridizer. But if we could have a few additions to the herbaceous kinds possessing some of the stability of B. Socotrana, with little or none of its resting or deciduous habit, they would be great gains and be appreciated by all lovers of greenhouse plants.

Elizabeth, N. J. *J. N. Gerard.*

Seasonable Greenhouse Notes.

WITH lengthening days and increasing sunlight greater watchfulness in such matters as temperature, ventilation and watering is necessary. All possible potting should be completed before the spring rush commences, and nothing left undone which may as well be done now as later in the season when other work is pressing.

The propagation of bedding-plants will now require attention. Coleus quickly roots in a bottom-heat of seventy-five to eighty degrees. If a few old plants have been kept for stock and judiciously pinched in a moderately warm house plenty of cuttings may be procured. The tips taken from these young plants late in the season may be inserted. The old plants are liable to attacks of mealy-bug and should be consigned to the rubbish heap. Alternanthera delights in a warm moist atmosphere, and nothing equals a good hot-bed for these conditions. We cut our old plants well back, and these give a plentiful supply of cuttings in a week or two. If there is likely to be any shortage of Zonale Pelargoniums, cuttings inserted now will make good plants by bedding-out time. We find the middle of March early enough to start a lot of Madame Salleria Geraniums; this variety still remains unequaled for borders. Fuchsias, Lantanas, Heliotropes, Stevias and many other plants require propagating now, and the cutting-bench should be fully occupied. Geraniums which have been carried over winter in boxes of sand with only sufficient water to prevent shriveling have recently been placed in two-inch pots in a warm house. These are shifted about April 1st to four-inch pots in which they make neat little plants.

Cannas are among the most useful of summer bloomers; this is a good time to start the main supply. We cut the roots up, leaving an eye to each piece and pot in small pots, in light sandy loam. A temperature of not less than sixty degrees should be afforded them, and if bottom-heat can be used it is all the better. A shift into five-inch pots when the smaller pots are well-filled with roots will make good plants by the middle of May. Tuberous Begonias can now be started in boxes of light compost, and should be watered sparingly until well started. These we transfer to pots later on, and we find that tubers started later in the season and planted out from boxes do almost as well. Seedlings make excellent plants the first season. We sowed our seed early in February; when sufficiently large to handle these are pricked off into shallow boxes, and from these transferred to a gentle hot-bed where they are planted four inches apart each way, in light, rich compost. Strong plants are produced by the first of June.

Our earliest sowings of Asters and Stocks are now in rough leaf, ready to prick off. Of Asters we find Queen of the Earlies the best for an early crop, while Boston Florists' Stock comes in much ahead of any other sort we have tried. The latter makes a useful pot-plant, and we usually have some in flower for Easter by sowing in December. The main batch of Asters, Stocks, Zinnias, Phlox Drummondi, Gaillardias, etc., we sow about the middle of March. Petunias, Lobelias, Verbenas and a few other kinds are started a month earlier. Salvia splendens and its varieties, Compacta and Le President, are so easily raised from seed that it is not worth while keeping any plants for propagating purposes, and seed sown now will produce good-sized plants by the time they are required. As bench and shelf room is now pretty fully occupied, boxes of newly sown seeds can be stood several deep after being watered. This prevents the surfaces from drying and germination is likely to be better better than when the boxes become more dry and require almost daily waterings. Sowings may be made now of Aralias, Grevilleas, Solanums and similar plants useful for winter decoration. Such seeds as Cannas and Ipomœa noctiflora hybrida germinate more quickly if soaked in warm water for twenty-four hours before sowing.

Every one having a glass house plans for an attractive show of flowers for Easter. Easter Lilies constitute the most important crop and the one most difficult to have exactly on time. We like to see the buds distinctly on Lilium Harrisi, L. longiflorum and L. candidum when Lent begins, and then, whatever vagaries of weather may follow, by forcing or retarding, the flowers may be had on time. A good deal of nice calculation is required to get all Easter flowers in at the right time. Green

aphis will injure Lilies if allowed to get a foothold, and they must be held in check either by dusting the tips with tobacco-dust, syringing with tobacco-extract dissolved in water, or by fumigation. Callas are useful for decorative purposes; we grow the large tubers of C. Æthiopica in ten and twelve inch pots, placing three and five to each pot. The variety Little Gem, while not of value as a winter bloomer, is now commencing to flower freely, and is useful to mix with other plants. Grown in eight-inch pots these will each have five to eight open flowers by Easter. Callas are gross feeders, and strong liquid food twice a week improves them. Spiræas are among the most useful plants for Easter. We prefer S. grandiflorum to the older S. Japonica. S. astilboides makes an elegant plant; it is taller in habit than the others, with handsomely cut and showy foliage and minutely branched panicles of white flowers; it requires two weeks longer forcing than the Japonica type to bring it into flower. Spiræas must have plenty of room to develop their foliage, stimulants and copious waterings. They are easily injured by tobacco-smoke, and it is well to remove them to another house while any fumigation is going on. I have seen many fine lots completely ruined by neglect of this simple precaution.

Easter comes a week earlier this year than last, and Hydrangeas will require considerable forcing to have them in good flower. The heads on our plants are now showing white, and will be well expanded by the required time. We have had to retard Cytisus racemosus and Indian Azaleas, but they are now being carried into heat. Bulbous plants, such as Hyacinths, Tulips and Narcissus, require some three weeks from the time they are housed until they are in flower. If the weather is very warm and sunny they may need holding back; if the reverse, some extra forcing may be necessary. Paris Daisies, especially the white variety, Grallert, are useful grown in six and eight inch pots. Plants of Antirrhinums in six-inch pots, carrying five or six spikes, are effective, and can readily be brought into bloom for Easter in an ordinary greenhouse temperature. We purpose trying the white Swainsonia galegifolia as a decorative plant this year for the first time. Its beautiful white sprays of flowers should make it extremely popular, and it is of easy culture. Calceolarias and Pelargoniums will both be somewhat late for Easter this year. Neither of these plants tolerate forcing, so it is useless to attempt to hurry them forward. Green aphis is very partial to both, and we pack plenty of tobacco-stems among our plants. A cool airy structure suits them, and they relish frequent syringings overhead until the flowers begin to expand. The flowering Begonias are among the most cheery objects in a greenhouse at this season, and florists are giving more attention to their cultivation. While they have comparatively little value as cut flowers for decorative purposes, as pot-plants they are unexcelled. A good batch of cuttings for next winter's crop should now be inserted. Later in the season the old plants grow finely if planted out in a partially shaded border. For midwinter blooming Begonia incurvata (called also carminata) deserves special commendation; we have just put in cuttings of this excellent variety. The old plants if cut back give abundant cuttings from the base, and these are preferable to those taken from flowering wood. The Cornell Experiment Station is trying to get together a complete collection of Begonias, and it is hoped all gardeners and florists will send to that institution varieties and species it may not have. A primary object in making the collection is to establish correct nomenclature of Begonias.

Taunton, Mass. *W. N. Craig.*

Caryopteris mastacanthus.—This neat subshrubby member of the Verbena family is said to be hardy as far north as Boston. Thomas Meehan & Sons, of Germantown, state that they have thoroughly tested it for the last five years in their nurseries, and that it has been only slightly winter-killed. As the flowers are produced on the current year's growth this is no disadvantage, for, no doubt, like many other plants of this character, it will be benefited by being pruned annually. The plant branches freely from a woody base. The leaves are ovate and hoary, with adpressed, silky hairs in greater abundance on the lower surface. The flowers are lavender-blue, in dense axillary clusters, and are produced in great profusion during the months of September and October. It is one of the easiest of plants to manage, and in the greenhouse has been quite free from insect pests of all kinds. Our half-dozen plants were raised from cuttings taken from a plant purchased last spring. They made neat little bushes of ovate pyramidal form about two feet high. We grew three in six-inch pots, and they made the best of decorative plants. Those kept indoors ripened seed abundantly. The plant can be easily increased from cuttings as well, so that it will be plentiful.

Abutilon Souvenir de Bonn is the best Abutilon with particolored leaves that I have seen. The variegation is white and confined to a rather heavy banding on the margin of the deeply cut palmate leaves. It is a highly decorative plant, however used, and small specimens in pots are especially beautiful. For foliage contrasts in informal gardening it is most effective. The variegation does not seem to interfere with the vitality of the plants, and they are always healthy and vigorous. Unlike many Abutilons, it naturally forms a stocky bush of pyramidal form and never needs staking. The red-striped orange flowers contrast well with the foliage, as is not the case with the Thompsoni forms, which have yellow variegation.

Wellesley, Mass. *T. D. Hatfield.*

Correspondence.

Decoration of School Grounds.

To the Editor of Garden and Forest:

Sir,—The subject of ornamenting our country roadsides with trees and shrubs has lately been treated interestingly in your columns, and I wish now to call attention to the tasteful planting of grounds about country schoolhouses. They stand at present, as a rule, as "ragged beggars sunning," without so much as a Sumach or Blackberry vine to adorn them. Not infrequently the playground is altogether omitted, and the children play in the road. Certainly the school-buildings in the country that are provided with pleasant grounds are exceptional, and although in a few instances sites have been chosen near native groves with pleasing results, planting is almost wholly neglected. This oversight where land is available and trees and shrubs can be procured at little or no cost, evidences lack of thoughtfulness on the part of the rural population rather than lack of taste. Children enjoy planting trees and seeds, but, as with other things, soon tire of the labor and care of cultivating unless stimulated by some unusual motive. The idea of ownership or proprietorship has been tried in many places with success, and children have been led to take pride in trees and shrubs placed under their care. As many children do not possess attractive homes the influence of a prettily decorated schoolhouse and grounds would add a much needed element in their education. The advantages to be derived by children from pleasant surroundings seem to have had little or no place in the arrangements for their earliest impressions at school in the country, where of all places the most natural beauty may be provided with the least exertion. Since childhood is the most impressible period of life it certainly is better to have schoolhouses and grounds comfortable and tasteful rather than inconvenient and unsightly. The remembrance of hours spent years ago in shady woods, among wild flowers and ferns, under orchard trees, or in old gardens, remains with us as we advance in life when later experiences are forgotten. Washington Irving wrote: "I thank God I was born on the banks of the Hudson! I think it an invaluable advantage to be born and brought up in the neighborhood of some great and noble object in Nature. I used to clothe it with moral attributes and almost to give it a soul." He traces to his companionship with it whatever is good or pleasant in his character.

Comparatively few are born with what are usually termed grand objects about them, but none in the country need be deprived of much that is refreshing and ennobling to the mind, provided the attention is early called to it.

White Pigeon, Mich. *Dorcas E. Collins.*

John Brown's Grave.

To the Editor of Garden and Forest:

Sir,—The letter of Mrs. Van Rensselaer, in your issue of January 29th, in regard to the recent purchase by the state of New York of the John Brown tract, reminds me that it may be worth while to reproduce part of an article printed in *Kate Field's Washington*, under date of September 26th, 1894. This account was given to Miss Field by the Rev. H. C. Lyon, who lived in North Elba for several years and knew many of the Brown family personally.

"It is more than likely that of the tens of thousands who have visited the grave of old John Brown, at North Elba, in the Adirondacks, not fifty have ever heard the history of that inscription so deeply chiseled in the great granite bowlder near the grave—'John Brown, 1859.' This bowlder, with its clear-cut letters, will always be regarded as the real memorial. It is true that the thin stone slab which formerly marked the grave of Captain John Brown, the grandfather of John Brown,

stands at the head of the grave, and additional inscriptions record the names of John Brown and three of his brave sons, who died for the cause of freedom. It was the wish of John Brown that his name might thus be linked with that of his grandfather, who was a soldier of the Revolution. But long after this frail and ancient tablet has crumbled into dust, the giant bowlder, with its classically beautiful inscription, will commemorate the name and fame of the Friend of the Oppressed.

"To the late Colonel Francis L. Lee, of Boston, Massachusetts, of the Forty-fourth Regiment of Massachusetts Volunteers, belongs the credit of establishing this imperishable memorial. For many years Colonel Lee had spent the summer months at his country home, 'Stony Sides,' on Lake Champlain, near Westport, New York, only about thirty miles east of North Elba, and had always entertained a high regard for the noble qualities of Brown, even before his exploits in Kansas had revealed to the world the stuff of which he was made. The year following the close of the war, 1866, Colonel Lee made a pilgrimage to North Elba, accompanied by some members of his family and the Hon. George S. Hale, of Boston, taking with him Mr. Andrew J. Daniels, of Westport, a skillful marble-worker. To Mr. Daniels Colonel Lee intrusted the task of cutting those large, deeply furrowed letters and figures in the flinty rock."

This cutting took many days, owing to the extreme hardness of the rock in which the letters are cut. This same hardness will protect the mighty bowlder from the hand of the vandal relic-seeker for all time. I wish also to add my protest as a native of Essex County against putting any artificial monument over the grave of the rugged old man who lies buried among the surroundings of his own choice "with his face to the south." If there is to be a monument built from the accumulated funds spoken of in the letter, let it be at Harper's Ferry or some other place where it will suit its surroundings, but not on the old farm.

Chestnut Hill, Mass. *Francis W. Lee.*

Recent Publications.

A History of Gardening in England. By the Hon. Alicia Amherst. London: Bernard Quaritch. 1895.

Miss Amherst's book is sure to be useful to any serious student of the history and literature of English gardening, and should also have a place in the library of every lover of gardens who takes an interest in the growth and development of an art which has a long past, since it started, we are told, in Eden. The History of Gardening gives evidence of long and careful preparation, and the author has grouped her facts so skillfully and with such a keen sense of historical perspective that the work is likely to become a classic of the craft with which it deals. Externally the book is attractive in its green cover, with the two quaint men digging and planting in an impossible garden, the sole decoration of which seems to consist in one or two microscopic twigs. The illustrations are less satisfactory, as in many cases the photogravure process has failed to reproduce the differences in light and shade of the actual scenes. The bibliography at the end is large and full, but, although there are some advantages in the chronological arrangement over one that is alphabetical, the latter is plainly more convenient. The short index of names, however, furnishes a much needed help to one who wishes to consult a given author. It would double the working value of this list if in another edition a little more information were given about the books on such points, for example, as whether or not they are illustrated, what is the best edition, etc.

The author begins by a few words on the probable want of gardens among the rough and warlike tribes which inhabited Britain before the Roman conquest, but passes on to the early Saxon times, when the monks, in their quiet communities, cultivated herbs and simples, while protecting learning and the refinements of life from the boisterousness of the mediæval world. An amusing part of the book is that in which Miss Amherst treats of the expenses of monastic gardening as shown in the pipe-rolls and chartularies of the period, where one may see from the charge "for labour of labourers in extracting 'mosse' from the cloister green, 6d.," that weeds grew and had to be pulled up as much in the middle ages as they do now. The Hortulanus, or Gardinarius, was an important person in the Priory, since he had charge, not only of the garden, but of the orchard, vineyard, moat and fish-ponds, and it was also his duty to see that the church was decorated with suitable flowers.

As soon as England began to recover from the many wars which kept people shut up in walled towns and in castles, where want of space prevented any but the most necessary cultivation, gardens multiplied, and an association of gardeners became so powerful that they forced the Mayor and Aldermen of London to recall an order which had been issued forbidding them to hold a market in front of the church of St. Austin.

The literature of the fourteenth and fifteenth centuries is full of references to sweet-smelling flowers and green lawns, while some of the illuminations in old manuscripts of that time are views in gardens where ladies sit upon turf seats and weave "gerlonds" of roses or periwinkles. Later, in Tudor times, when houses did not need to be surrounded by high walls, and people had time to think of something besides fighting others and defending themselves, the pleasure-grounds began to be more elaborate, and the topiary artist, who in later times was to create such extraordinary objects in Yew, was called in to pleach alleys and hedges. Galleries and mounts also make their appearance, and flower-beds fenced with brightly painted trellises. In short, one feels that here is the fresh and fair beginning of the simple, hearty country life which has continued to grow until the present time. Miss Amherst also shows that in the reign of Elizabeth gardening did not lag behind the other gentle arts, since Bacon's well-known essay was only one of the many treatises on the subject which were written about that time. The garden became a part of daily life, insomuch that the architect, John Thorpe, designed the surroundings for his houses, thinking the plan of the garden important enough to require an artist for its proper and harmonious distribution. The author also glances at the humbler kitchen-garden, where the list of vegetables has constantly grown longer and the methods of cultivation more technical.

In the time of the Cavaliers and Roundheads the love of gardening grew steadily in favor, both with the working classes and the gentry, as shown by the well-known Royalist names of John Evelyn, the author of *Sylva*, and Lord Capel, whose famous garden was at Kew. Toward the end of the seventeenth century the influence of the pomposity of Versailles was felt in England, since Le Nôtre is said to have been ordered by Charles II. to make designs for the elaborate alterations at Hampton Court, which were afterward only partly carried out. It was natural when William and Mary were on the throne that Dutch gardening should become the fashion, and accordingly we see a great remodeling of old places going on, largely under the superintendence of Hollanders, who, doubtless, brought with them the taste for cultivating Tulips, which became a mania in their own country.

Miss Amherst's sketch of the rise of landscape-gardening is most interesting, since she shows how the reaction against the excessive formality of the later gardens created a style which, in its affected simplicity and naturalness, grew to be quite as artificial as the one it had superseded. The author also emphasizes the enormous amount of damage done to fine old places by the "improvers," who cut down avenues of grand old trees because they considered them neither "pensive, picturesque, nor sublime." A short account of the progress of horticulture in this century, with a few appreciative remarks on some modern gardens, closes this attractive book. Its mass of well-ordered and well-digested information, with constant reference to original authorities, gives it a genuine value, and it has the charm of being written in an easy, flowing style which is never dull. It is altogether the best existing treatise on the subject, and it is not likely soon to be superseded.

Notes.

The Puget Sound University owns what is called a residence park of some twelve hundred acres south-west of the city of Tacoma, and it is proposed to devote some two hundred acres of this, where the soil is most suitable, to an arboretum of such trees as will grow in the remarkable climate of that region. The amount of land available is so ample that room can be given for a large collection. Some ten thousand young plants of two hundred and fifty species, native and foreign, already form the nucleus of the proposed tree museum.

As a proof that more Olive-trees have been planted during the past season than ever before in California, a recent dispatch to the *Tribune* states that a single nurseryman in Pomona has sold 200,000 trees, that Mr. Andrew McNally, the Chicago publisher, is planting an Olive orchard of four hundred acres in Orange County, and Mrs. Adlai Stevenson is preparing 340 acres in San Bernardino County for Olive-trees. All the Olive groves in southern California were profitable last year and the demand for California olives constantly exceeds the supply.

Mr. William Falconer, editor of *Gardening*, has accepted the position of superintendent of the park system of Pittsburg, Pennsylvania, which has been vacant since the death of A. W. Bennett. Mr. Falconer has been in this country some twenty years, and during the latter half of this time he has had charge of Dosoris, the well-known estate of Charles A. Dana, Esq., on the northern shore of Long Island. He has had an unusually wide experience in the various branches of gardening, and the new parks of Pittsburg are sure to be managed with intelligence and skill.

A Farmers' Bulletin on Potato Culture has just been issued by the United States Department of Agriculture, which, while not intended as a complete treatise, contains many helpful suggestions in relation to a crop which is grown in every state and territory of the Union, and which amounts in value every year to a hundred million dollars. Such questions as when to cut tubers for seed, the quantity of seed per acre, the size of the pieces, the value of mulching, and the proper methods of harvesting and storing are discussed in the pamphlet, which contains twenty-three pages and is filled with useful matter.

An effort to explain the physical geography of one of those narrow but well-defined areas to which the successful cultivation of certain classes of fruit is often confined, is found in Bulletin 109 of the Cornell Experiment Station, and entitled the Geological History of the Chautauqua Grape Belt. This region is very plainly defined, and the inquiry was undertaken to determine, if possible, the reasons for the existence of this particular belt, and to ascertain whether its limits might be profitably extended. The work has been done by Professor R. S. Tarr, of Cornell University, and it contains much interesting research, both on the soil and on the climate of the Chautauqua Grape fields, and gives reasons why they are specially adapted to all the fruits common in this latitude. Altogether, it seems to be a peculiarly favored spot, and Professor Tarr suggests that even the Tobacco plant might be profitably grown there.

In a bulletin rather more than two years ago concerning Japanese Plums in North America, Professor Bailey stated that these Plums are the most important type of fruit introduced into North America during the last quarter of a century, and deserved to be carefully tested in all parts of the country. Of course, this did not mean that the Japanese Plums were superior to the European Plums of the Prunus domestica type, for, wherever these will succeed, they are still more valuable, although the Japanese can be added to give a variety. The advantages of the Japanese Plums are that they are adapted to a wider range of country than the European type, and among other desirable features which they possess in various degrees are earliness, productiveness, freedom from black-knot and leaf-blight, with long-keeping quality and beauty of fruit. Several of them compare favorably with the Lombard in quality, but it must be admitted that they are generally inferior to the best European Plums.

The first California grape-fruit of this season to reach this city was sold on March 3d and comprised a car-load, or 300 boxes. Much of it was small and below the desirable sizes of fifty-four and sixty-two to a box. The best realized $8.00 at wholesale, a few boxes containing from 150 to 200 of the fruits bringing but $2.00 each. Nevertheless, the entire lot averaged $6.00 a box. The color was light and the weight not heavy enough to insure first quality. Some shaddocks, from the Barbadoes, are now forced into the market; these are of irregular form, their uninviting lemon color marked with green. Altogether pleasing are the handsome Forbidden Fruits from Jamaica; these are large, spherical, the smooth skin a rich orange-color and of oily texture. The fruit is free from bitterness and exceedingly juicy. These have realized $7.00 to $8.00 a box. No Tangerines or Mandarins have come from California during the past fortnight, and the season for them is nearly ended. The limited stock on hand is offered at $3.00 to $4.50 a box. The supply of pears for the remainder of the season is now practically controlled by one firm. Winter Nelis are offered at $5.50 to $6.00 a box to wholesale buyers, Easter Beurres bringing a half-dollar less, and large russet P. Barrys $4.50 to $5.00.

The extensive mycological herbarium of Mr. J. B. Ellis, of Newfield, New Jersey, has been purchased by the Board of Managers of the New York Botanical Garden, and will be deposited in the fire-proof museum building of the Garden which it is proposed to erect in Bronx Park. The purchase also includes a considerable portion of Mr. Ellis' library, and the collection will be brought to this city within a short time and placed in a fire-proof storage warehouse until it is finally placed in the Garden. The herbarium represents the work of nearly fifty years devotedly given by Mr. and Mrs. Ellis to the study and accumulation of Fungi from all parts of the world. It is especially rich in North American species, being very nearly complete in that regard, and containing all or nearly all the types described either by Mr. Ellis alone or in coöperation with Dr. M. C. Cooke, Mr. B. M. Everhart, Mr. E. W. Martin, Professor W. A. Kellerman, Rev. A. B. Langlois, Mr. E. D. Holway, Mr. B. L. Galloway and others. It is put up in volumes, there being some 250 volumes of published exsiccati, including all but a few of the earliest distributed sets, and more than 150 volumes of a general collection, the whole completely indexed on a card catalogue. There are also more than 100 tin cans and boxes filled with fleshy fungi. This important acquisition will make the new institution a centre of interest for students of these plants, and with the other collections already secured will make a substantial foundation for a great herbarium.

An array of vegetables, such as may be seen any Saturday morning in our large markets and first-class green-grocers' stores, presents almost as wide a range of color as a collection of flowers. Besides this diversity of color there is the delightful freshness and crispness of stems and foliage and the beauty of plump roots with clinging soil, while the whole place is pervaded with the wholesome and satisfying earthy smell which reminds one of spring in the country. Green is, of course, the prevailing color, and is seen in many shades and tints now, especially in herbs for seasoning, and salads. The fine-leaved chervil, delicately fragrant tarragon, and the more pungent mint are abundant, while curled parsley, rank-growing chives in their native sod, forced dandelion, corn salad, spinach and kale, tight bunches of perfectly grown watercress and celery, heads of curled endive, escarolle, Romaine and other lettuces, each has its particular tint, and the so-called French salad is specially noteworthy for the white midribs and pale lemon-colored blades of its leaves. Excepting Sugar corn and Lima beans, all the summer vegetables may now readily be had in abundance, although prices have advanced recently, owing to cold weather in northern Florida and the other states of the south Atlantic coast. The main supplies now come from along the coast of southern Florida. New egg-plants, small, glossy and rich purple in color; snowy white cauliflowers, in their green envelopes; choice grades of asparagus in generous-sized bunches, and long grass-green peppers, with occasional splashes of red, are heaped among masses of golden pumpkins, rusty green okra and French artichokes and the earthy brown celeriac, long light straw-colored parsnips and pale green squashes. Neatly piled heads of imported cabbage, glossy and rich purple-red, are showy beside the dull red of beets. Russet-colored mushrooms and oyster-plants, the less well-known kohl-rabi, waxy green cucumbers, fresh-looking well-filled pea-pods and yellow and green string-beans are in all well-stocked offerings of vegetables. New leeks and spring onions are shown, and full-grown onions, in all sizes, in satiny skins of silver, red and yellow. There are slender stalks of bright pink rhubarb, and field tomatoes lacking summer richness of coloring. Sweet potatoes, red-jacketed Bermuda potatoes, clear white and purple turnips and the dull cream-colored rutabagas are common enough. Perhaps no one vegetable makes so decided an impression on the eye as a lot of carrots, especially when these small clear lemon-yellow roots are lighted up by a neighboring gas-jet.